

AMENDMENTS TO THE CLAIMS

1. (previously presented) A magnetic sensor including a substrate having a magnetism-sensitive element formed thereon and which detects a magnetic signal from a medium having magnetic signals recorded thereon, the magnetic sensor having:
 - a nitride film formed on the magnetism-sensitive element;
 - an organic film formed on the nitride film; and
 - a membrane formed on the organic film,wherein said magnetic sensor has said membrane disposed opposite to the medium, and relatively moves along said medium.
2. (previously presented) The magnetic sensor as set forth in claim 1, wherein the membrane is of amorphous carbon hydride (will be referred to as “DLC film” hereinafter).
3. (previously presented) The magnetic sensor as set forth in claim 1, having an intermediate film formed between the organic film and the membrane.
4. (previously presented) The magnetic sensor as set forth in claim 3, wherein the intermediate film has mixed therein any one or more of Si, Ti, Cr, W and Ta wherein the one or more of Si, Ti, Cr, W and Ta bond with carbon.
5. (original) The magnetic sensor as set forth in claim 3, wherein the intermediate film is formed from Si, C, O and H.
6. (previously presented) The magnetic sensor as set forth in claim 3, wherein the boundary between the intermediate film and the membrane has a structure in which the components vary continuously.

7. (previously presented) A position detector comprising:
a magnetic scale with position signals longitudinally provided thereon; and
a magnetic sensor including a substrate having a magnetism-sensitive element formed thereon, a nitride film formed on the magnetism-sensitive element, an organic film formed on the nitride film, and a membrane formed on the organic film;
wherein said magnetic sensor has said membrane disposed opposite to the magnetic scale, and relatively moves along the magnetic scale to detect position signals provided on the magnetic scale.
8. (previously presented) The position detector as set forth in claim 7, wherein the membrane is of amorphous carbon hydride (will be referred to as "DLC film" hereinafter).
9. (previously presented) The position detector as set forth in claim 7, having an intermediate film formed between the organic film and the membrane.
10. (previously presented) The position detector as set forth in claim 9, wherein the intermediate film has mixed therein any one or more of Si, Ti, Cr, W and Ta wherein the one or more of Si, Ti, Cr, W and Ta bond with carbon.
11. (original) The position detector as set forth in claim 9, wherein the intermediate film is formed from Si, C, O and H.
12. (previously presented) The position detector as set forth in claim 9, wherein the boundary between the intermediate film and the membrane has a structure in which the components vary continuously.
13. (currently amended) A magnetic sensor including a substrate having a magnetism-sensitive element formed thereon and which detects a magnetic signal from a medium having magnetic signals recorded thereon, the magnetic sensor having:
an inorganic film formed on the magnetism-sensitive element to a thickness between 100 nm to 3000 nm;
an organic film formed on the inorganic film to a thickness of several μm ; and

an amorphous carbon hydride membrane formed on the organic film to a thickness of 0.1 μm to 5 μm ,

wherein said magnetic sensor has said amorphous carbon hydride membrane disposed opposite to the medium, and moves relatively along said medium.

14. (previously presented) A magnetic sensor including a substrate having a magnetism-sensitive element formed thereon and which detects a magnetic signal from a medium having magnetic signals recorded thereon, the magnetic sensor having:

an inorganic film formed on the magnetism-sensitive element;

an organic film formed on the inorganic film;

an intermediate film formed on the organic film; and

a membrane formed on the intermediate film,

wherein said magnetic sensor has said membrane disposed opposite to the medium, and moves relatively along said medium.

15. (previously presented) The magnetic sensor as set forth in claim 14, wherein said membrane is formed from the group consisting of diamond-like carbon, TiN, CrN, SiC, Al_2O_3 and AlN.

16. (currently amended) A position detector comprising:

a magnetic scale with position signals longitudinally provided thereon; and

a magnetic sensor including a substrate having a magnetism-sensitive element formed thereon, an inorganic film formed on the magnetism-sensitive element to a thickness between 100 nm to 3000 nm, an organic film formed on the inorganic film to a thickness of several μm , and an amorphous carbon hydride membrane formed on the organic film to a thickness of 0.1 μm to 5 μm ;

wherein said magnetic sensor has said amorphous carbon hydride membrane disposed opposite to the magnetic scale, and moves relatively along the magnetic scale to detect position signals provided on the magnetic scale.

17. (previously presented) A position detector comprising:
a magnetic scale with position signals longitudinally provided thereon; and
a magnetic sensor including a substrate having a magnetism-sensitive element formed thereon, an inorganic film formed on the magnetism-sensitive element, an organic film formed on the inorganic film, an intermediate film formed on the organic film and a membrane formed on the intermediate film;
wherein said magnetic sensor has said membrane disposed opposite to the magnetic scale, and moves relatively along the magnetic scale to detect position signals provided on the magnetic scale.
18. (previously presented) The position detector as set forth in claim 17, wherein said membrane is formed from the group consisting of diamond-like carbon, TiN, CrN, SiC, Al₂O₃ and AlN.